

SOUTHWARD MIGRATION AT NGULIA, TSAVO, KENYA 1977/78

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The Ngulia migration phenomenon needs little introduction. Previous accounts have been given of the attraction of southward bound Palaearctic night migrants to the lights of the Safari Lodge between November and January (Pearson & Backhurst 1976, Backhurst & Pearson 1977). The purpose of this note is to review ringing activity during the 1977/78 southward movements, and to draw attention to observations and records of particular interest.

ACCOUNT OF THE SEASON

Except for periods when half to full moon was a potential interference during the second half of the night, the Lodge was manned by one to five ringers on most days from 22 October 1977 to 7 January 1978. Once again, over 4000 Palaearctic birds were ringed. This was due, however, to efficient catching at night, and concerted ringing effort on a few occasions when large numbers of birds were grounded, for weather conditions were less favourable than in any of the five previous years. Although the rains were heavy and prolonged, there was little rain at night, or even persistent mist, until mid December. The peak passage time at the end of November and the beginning of December (see Pearson & Backhurst 1976) was in fact completely unproductive due to a full moon period followed by a week of fine nights. Low cloud at Lodge level persisted over the second part of the night on only eleven of the 37 dates manned, with accompanying showers on only five occasions. Thus, although birds were often seen moving near the lights at night in temporary patchy mist, numbers grounded at dawn were usually small, and falls of thousands of birds were encountered on only five occasions, all in mid December.

On the clear mornings of 22 and 23 October there was no sign of arrival; the only Palaearctic migrants seen near the Lodge were single Garden and Olivaceous Warblers, Wheatear and Isabelline Wheatear, a Spotted Flycatcher and a party of Willow Warblers¹. However, the first visit after the late October full moon, on 4-7 November, proved to be the most interesting of the year. It coincided, unusually early in the season, with a period of low night mists, so that it was possible, for the first time in six years of extensive study at Ngulia, to sample migration and draw conclusions about overhead movements at the beginning of November. Birds appeared around the lights each night, but numbers were rather small compared with those regularly encountered with similar weather conditions during late November - early December (see Pearson & Backhurst 1976, Backhurst & Pearson 1977). Very few birds were grounded at dawn on 5th, and a few hundreds only on 6th and 7th. Due mainly to netting at night, over 470 birds were ringed over the three days; the species composition of this catch was rather unusual. Whitethroats predominated on 5th and 6th, while Sprossers were well represented on 5th and predominated on 7th. Of greater interest, Rufous Bush Chats were second only to Whitethroats in abundance on 5th and 6th, and the total of 53 ringed during the three days in fact exceeded any previous Ngulia *annual* total for the species. Nightingales (23 ringed, 18 of these on 7th) and Spotted Flycatchers (28 ringed) were also especially well represented, while European Nightjars were caught each night, and up to 20 seen together beneath the lights on

¹ Scientific names of all species mentioned in the text are in Table 1.

6th. Yellow Wagtails and Tree Pipits were heard in some numbers at night in the mist on 5th and 6th, as were hirundines, and the first Sand Martin to be ringed at the Lodge was netted at night on 5th. Four Olive-tree Warblers were noteworthy, as was an Icterine Warbler, apparently the first recorded in eastern Kenya, netted on 7th. There was a marked lack of some species in these early movements. Thus, only 16 Marsh Warblers and three River Warblers were caught in all, and the Basra Reed Warbler was unrecorded.

The Lodge was manned continuously from 12 November until the next full moon intervened on 22nd. Unfortunately, most nights were clear and although showers were sometimes heavy, these occurred during afternoon and evening. There were small falls in light mist during the last hour of darkness on 18th and 19th, which involved mainly Sprossers, and produced seven Olive-tree Warblers. A more notable catch of over 300 birds was made on 21st when thick mist remained at Lodge level from 02.30 hrs till dawn.

Coverage was again continuous from 4-21 December. The period 4th-9th, potentially the best of the season, was totally unproductive as a result of a succession of clear dry nights. On 10th, thick low mist persisted from midnight onwards, but there were no showers, and numbers of grounded migrants next morning were small. However, birds were numerous around the buildings at night, and 470 were ringed in all, the majority of these being Marsh Warblers. On 12th, low mist from 00.30 hrs, this time with a few light showers, produced a much larger fall at dawn. Migrants were caught steadily throughout the night and in good numbers in the bushes near the Lodge next morning. The overall total of 849 Palaearctic birds was the highest ever ringed at Ngulia in a day (actually this total was caught and ringed in a twelve hour period). Again, Marsh Warbler (499 ringed) was the dominant species; a total of 50 Willow Warblers was by far the highest ever daily catch but, apart from seven Basra Reed Warblers and a late Olive-tree Warbler, there were no other outstanding features. More misty nights with light showers resulted in further large falls on 15th, 17th, 18th and 19th. Marsh Warblers and Whitethroats were the dominant species, but Sprossers (95 ringed on 18th) were still well represented, and Willow Warblers continued to appear in unusually high numbers. In all, 3024 birds, some 70 per cent. of the season's total, were ringed from 10 to 21 December.

Rain, with frequent night cloud and mist, continued over the Christmas full moon and into early January. As in early 1977, a profusion of rank grass, green leaf and fruiting bushes now surrounded the Lodge, but there was no sign up to early January that this cover was being exploited as was the case during January 1977 (Backhurst & Pearson 1977). The only January ringing visit was made between 5th and 7th. The presence of migrants near the Lodge still seemed to depend on their attraction to the lights at night. During persistent mist, with occasional showers, small numbers of birds were seen and caught during the early hours of 6th, and a few hundred were present next morning. On 7th, mist appeared at 00.30 hrs but lifted after half an hour, and cleared well before dawn; very few migrants were caught. The catch of 170 for the two days consisted mainly of Marsh Warblers and Whitethroats, and involved only six other Palaearctic species. An Upcher's Warbler, four Barred Warblers, two River Warblers and a Basra Reed Warbler were included, but not a single *Luscinia* was recorded.

October - February ringing totals for 1977/78 and for 1969/78 are given in Table 1. It can be seen that, apart from the species caught in unusual

TABLE 1

Numbers of Palaearctic night migrants ringed at Ngulia Lodge between October and February in the years 1969-1978

Species	1977/78	%*	1969/78
Spotted Crake <i>Porzana porzana</i>	0	-	1
Cuckoo <i>Cuculus canorus</i>	0	-	1
Lesser Cuckoo <i>C. poliocephalus</i>	0	-	1
Nightjar <i>Caprimulgus europaeus</i>	14	333	35
Red-backed Shrike <i>Lanius collurio</i>	33	69	280
Red-tailed Shrike <i>L. isabellinus</i>	8	16	265
Hybrid <i>L. collurio/isabellinus</i>	0	-	2
Tree Pipit <i>Anthus trivialis</i>	3	-	11
Yellow Wagtail <i>Motacilla flava</i>	0	-	2
Golden Oriole <i>Oriolus oriolus</i>	1	-	6
Spotted Flycatcher <i>Muscicapa striata</i> .	38	463	79
Great Reed Warbler <i>Acrocephalus arundinaceus</i>	4	-	13
Basra Reed Warbler <i>A. griseldis</i>	15	35	233
Marsh Warbler <i>A. palustris</i>	1626	138	7649
Sedge Warbler <i>A. schoenobaenus</i>	3	-	29
Reed Warbler <i>A. scirpaceus</i>	2	-	37
Icterine Warbler <i>Hippolais icterina</i>	1	-	1
Upcher's Warbler <i>H. languida</i>	9	32	152
Olive-tree Warbler <i>H. olivetorum</i>	15	84	107
Olivaceous Warbler <i>H. pallida</i>	10	36	153
River Warbler <i>Locustella fluviatilis</i>	94	50	1063
Savi's Warbler <i>L. luscinioides</i>	0	-	1
Willow Warbler <i>Phylloscopus trochilus</i>	190	503	384
Wood Warbler <i>P. sibilatrix</i>	0	-	1
Blackcap <i>Sylvia atricapilla</i>	6	-	24
Garden Warbler <i>S. borin</i>	24	50	269
Whitethroat <i>S. communis</i>	1322	115	7181
Barred Warbler <i>S. nisoria</i>	21	40	291
Rufous Bush Chat <i>Cercotrichas galactotes</i>	61	229	221
Irania <i>Irania gutturalis</i>	72	75	565
Sprosser <i>Luscinia luscinia</i>	629	99	3905
Nightingale <i>L. megarhynchos</i>	41	145	183
Rock Thrush <i>Monticola saxatilis</i>	4	-	22
Isabelline Wheatear <i>Oenanthe isabellina</i>	2	-	8
Wheatear <i>O. oenanthe</i>	8	-	15
Pied Wheatear <i>O. pleschanka</i>	2	-	4
Redstart <i>Phoenicurus phoenicurus</i>	0	-	1
Swallow <i>Hirundo rustica</i> (at night)	16	-	24
Sand Martin <i>Riparia riparia</i> (at night)	1	-	1
Number of species	31	(82%)	38
Total ringed	4275	(113%)	23 220

*The 1977/78 total expressed as a percentage of the 1972/77 mean for each species.

numbers in early November, only the Willow Warbler gave a notably high 1977/78 total, almost three times the highest in any previous year. Several species were, in fact, rather scarce; thus totals of shrikes, Basra Reed Warblers, *Hippolais* warblers and Barred Warblers were well below average and, for the first year since 1971/72, fewer than 100 River Warblers were ringed.

Weights have provided some of the most intriguing data collected at Ngulia in past years, but in 1977/78 there were no occasions when weights were exceptionally high, or when the apparent association between high weights and heavy rainfall could be tested (see Backhurst & Pearson 1977). In early November most birds were lean, the only exception being a few moderately fat Whitethroats, and average weights were rather low for all species. This was not surprising since few migrants would be expected to be bound much farther south at this early date. From mid November onwards, a considerable proportion (20-30 per cent.) of the Marsh Warblers, White-throats and River Warblers were rather fat; December weights in general were higher than in most years.

TIMING OF SOUTHWARD MOVEMENTS

From the third week of November to the second week of December, misty weather at night, with no moon, has invariably produced large concentrations of migrants at the lights. The volume of migration then decreases considerably, for, with the same conditions, much lower numbers have tended to appear in late December, and only the odd bird or two seems to be still on the move in mid January. Information on the build up of movement has been rather limited, for this seems to occur late in October or early in November, at a time when visits to the Lodge have usually been frustrated by clear, dry nights. Thick mists were encountered during the second week of November in both 1974 and 1975, and many birds were caught in these years, showing that movements were already well established. On the other hand, low cloud with some showers on 27 October 1974 revealed practically no migrants, despite an absence of moon from 02.30 hrs. On 3 November 1975, another moonless night, cloud was at times down to 30 m, low enough to bring birds into view moving south above the lights although not low enough to ground them. Numbers though were far less than are typically seen in identical conditions later in November. Ideal conditions for falls of birds in early November were encountered in 1977 for the first time. This occasion served to confirm the already existing impression that movement is just beginning to build up at this time. Thus, falls were small, and numbers of migrants moving near the lights were similar to those typically to be seen in late December rather than in late November.

SEASONAL CHANGES IN CATCH COMPOSITION

The overall species composition of the catch has varied little at Ngulia from one year to another; marked changes are always noted, however, during the course of individual seasons. As a result of several years' trapping, differences have been established from one species to another in patterns of seasonal occurrence. Amongst the main species, for example, Sprossers are particularly prominent during November, and relatively scarce by late December, while the contributions of Marsh Warbler and River Warbler are highest in catches from the end of November to early January. The evidence up to 1976 indicated that certain species crossed Ngulia mainly during November, with a few stragglers at most later in the season; these species were Nightjar, Red-backed Shrike, Spotted Flycatcher, Olive-tree Warbler,

Rufous Bush Chat and Nightingale. Four of these made unprecedented contributions to catches in early November 1977, suggesting even more strongly that most of their movement precedes the main migration, and is normally undetected because of the lack of suitable conditions to bring birds to ground.

TABLE 2

An analysis of the 18 main species of Palaearctic night migrants ringed at Ngulia Safari Lodge between 1 November and 16 January, shown as percentages of the total half-month catch for the years 1972-1978

Species	Nov I	Nov II	Dec I	Dec II	Jan I
Nightjar	1.1	0.2	*	0	0.1
Red-backed Shrike	4.6	2.0	0.4	0.1	0.7
Red-tailed Shrike	1.6	1.5	0.6	1.1	1.2
Spotted Flycatcher	2.6	0.4	*	*	0
Basra Reed Warbler	0.3	1.2	1.2	0.6	1.3
Marsh Warbler	11.7	26.4	40.4	38.0	38.9
Upcher's Warbler	0.4	0.5	0.6	0.9	1.4
Olive-tree Warbler	1.6	0.8	0.2	0	0
Olivaceous Warbler	2.2	0.8	0.4	0.5	0.5
River Warbler	2.0	4.7	5.8	3.4	3.4
Willow Warbler	0.9	0.9	2.1	2.4	1.1
Garden Warbler	0.1	0.5	1.1	1.8	4.8
Whitethroat	25.6	30.5	29.3	36.5	32.9
Barred Warbler	1.6	1.1	0.8	1.1	3.8
Rufous Bush Chat	5.7	1.0	0.4	0.2	0
Irania	4.0	1.9	2.0	3.3	2.3
Sprosser	29.2	24.0	13.5	8.2	6.2
Nightingale	2.8	1.2	0.4	0.3	0.1
Birds/half-month	1670	7354	8491	4178	853

Percentages are rounded to the nearest 0.1 per cent., those less than 0.05 per cent. are shown by an asterisk (*).

Table 2 shows contributions of the various main species to catches at different stages of the migration period, based on combined ringing figures for six seasons. In addition to the species mentioned above, the Olivaceous Warbler stands out as an earlier migrant, while Garden and Upcher's Warblers feature mainly in December and early January catches, and the Basra Reed Warbler is particularly scarce before late November.

The early stages of southward movement at Ngulia, although apparently the most interesting in terms of species diversity, remain the least well documented. It is to be hoped that future late October and early November visits will coincide more frequently with productive weather conditions so that larger samples can be made of these early migrants.

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SHORT COMMUNICATIONS

THE HERONRY AT LAKE JIPE Lack (1977) referred to two visits to this heronry on 31 July and 26 December 1976 when approximately 50 or less pairs of six species were observed nesting. Following reports that breeding was again in progress, I visited the heronry on 28 March 1978, and it was soon clear that many more birds were breeding than during Lack's visits in 1976.

The heronry, just inside Tanzania, was situated at one end of a large swampy reed island about 150 m², and was almost certainly the same one visited and discussed by Lack. (Lake Jipe is actually shared by Kenya and Tanzania.) The Tsavo National Park boatman who accompanied me told me that the site had been occupied since late December 1977.

The island itself was virtually impossible to penetrate and, as such, was free from disturbance by local fishermen and visitors. At a few points it was possible to beach the boat into the reeds, and from a vantage point on top of the boat estimates of the nesting activity could then be made. Due to the denseness of the reeds it was impossible to make any counts of nests other than those where large young were visible. The composition of the heronry on 28 March 1978 can be summarized as follows:

- Phalacrocorax africanus* Long-tailed Cormorant One of the commonest species with at least 50 pairs nesting, the majority of which appeared to be tending young at all stages.
- Ardea alba* Great White Heron About 20-25 pairs nesting. As many birds were sitting tight it was impossible to determine the contents of any nests.
- Ardea melanocephala* Black-headed Heron Approximately 10 pairs nesting, most of which were sitting tight either on eggs or with small young.
- Ardea purpurea* Purple Heron Probably the most abundant heron present with at least 50 pairs nesting, most of which appeared to have large and almost fully fledged young.
- Ardeola ibis* Cattle Egret At least 50 pairs nesting, the majority of which appeared to be feeding young at all stages.
- Ardeola ralloides* Squacco Heron At least five pairs nesting, all with large and fully fledged young, some of which were making their first attempts to fly.
- Threskiornis aethiopica* Sacred Ibis About 10-12 pairs nesting, though the contents of all nests were either totally or partially hidden from view. Some probably contained young.